

McCarty, R.D.

Hydrogen technological survey- thermophysical properties

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ABSTRACT

This publication is part of a major hydrogen safety review in progress by the NASA Aerospace Safety Research and Data Institute (ASRDI). The objectives of the review include:

1. Recommendations to improve NASA's hydrogen handling practices by comparing NASA and contractor hydrogen systems including the design, inspection, operation, maintenance and emergency procedures.
2. Assessment of the vulnerability to failure of hydrogen equipment from a variety of sources so that hazards may be defined and remedial measures followed.
3. Contributions to safe hydrogen handling techniques through research.
4. Formulation of criteria and standards on all aspects of hydrogen handling storage and disposal.

This Special Publication is composed of the thermodynamic functions, transport properties, and physical properties of both liquid and gaseous hydrogen. The low temperature regime is emphasized. The tabulation of the properties of normal hydrogen in both SI and engineering units is presented on microfiche in an envelope inside the back cover. The tabulation of parahydrogen is presented in the text. Because the data are detailed beyond that previously available, this handbook should fill an existing need for both the scientific and technical communities.